

We claim:

Claim [1]

A pipe joint comprising;

a joint body consisting of a plurality of insertion parts which, having a cylindrical form to be fitted in pipes, are connected together through a connection part consisting of a single cylinder or a plurality of cylinders having the same diameter as the pipes, and

a fixing device which consists of an elastic member of a form of a circular disc having a diameter approximately equal to an inner diameter of said pipes, clamp discs arranged on both sides of said elastic member having approximately a same diameter as said elastic member and a stopper piece, which, being arranged adjacent one of said clamp discs, has a plurality of legs extending axially with increasing diameter from a periphery of a circular plate having a diameter smaller than said inner diameter of said insertion parts and is provided at the ends of the legs bent back claws, which, having a peripheral diameter a little greater than said inner diameter of said insertion parts, is able to bite onto said inner periphery of said insertion parts, and a bolt and a nut which, lead through central holes of said elastic member, clamp discs and stopper piece, fasten them tightly, said fixing device being fitted in the pipe with said stopper piece directed toward an end and placed at a position from said end of said pipe corresponding to a length of said insertion part.

Claim [2]

A pipe joint comprising;

a joint body consisting of a plurality of insertion parts which, having a cylindrical form to be fitted in pipes, are formed on an inner periphery of one end thereof with a taper that decreases in diameter toward the other end, are formed on a same end a number of axially extending slits, are further provided on said other end a pin hole perpendicular to axis thereof and are connected through a connection part consisting of a single cylinder or a plurality of cylinders having a same diameter as said pipes,

a push pin that, having a cylindrical form to be fitted in said insertion part of said joint body, has formed at the outer end a head portion having a taper to engage with said taper of said insertion part and is provided on an inner end side with a pin hole perpendicular to axis thereof corresponding to said pin hole of said insertion part, and

an elliptical pin which, having a form of an elliptical cylinder, is formed at a center of one end thereof with a hexagonal recess, and is inserted in said pin holes of said insertion part and a push pin fitted therein to be turned to shift said push pin in an axial direction of said insertion part.

Claim [3]

A pipe joint comprising;

a joint body consisting of a plurality of insertion parts, which, having a cylindrical form to be fitted in pipes, are formed on inner ends thereof with a number of axially extending slits and are connected together at other ends through a connection part consisting of a single cylinder or a plurality of cylinders having a same diameter as said pipes,

a sleeve which includes another insertion part having a cylindrical form to be fitted in said insertion part of said joint body, said inner insertion part being formed on an inner periphery of said inner end thereof with a taper which decreases in diameter toward an other end and on said same inner end a number of axially extending slits, and is provided at the outer end of said inner insertion part with a stopper portion which, having an outer diameter slightly smaller than an inner diameter of said pipe, is provided with a through pin hole perpendicular to an axis thereof,

a push pin which, having a cylindrical form to be inserted in said sleeve, is formed at said inner end thereof with a head portion having a taper to engage with a taper of the sleeve and is provided on an outer end side thereof with a through pin hole perpendicular to an axis thereof approximately corresponding to said pin hole of said sleeve, and

an elliptical pin which, having a form of an elliptical cylinder, is formed at a center of one end thereof a hexagonal recess, and is inserted in said pin holes of said sleeve fitted in said insertion part of said joint body and said push pin to be turned to shift said push pin in an axial direction of the sleeve.

Claim[4]

A pipe joint comprising;

a joint body consisting of a plurality of insertion parts which, having a cylindrical form to be fitted in pipes, are formed on an inner end thereof with a number of axially extending slits, are provided on said inner end side with a dowel hole and are connected together at other ends thereof through a connection part consisting of a single cylinder or a plurality of cylinders having a same diameter as said pipes, said connection part being provided with a dowel hole at a mid point of said single cylinder, in a case of a single cylinder, or at a position where axes of said cylinders intersect, in a case of a plurality of cylinders,

a sleeve 47 which, having a form of a cylinder with a bottom to be fitted in said insertion part with a bottom thereof on an outer end side, is provided with a through hole in a bottom thereof, is formed on an outer end side thereof with a number of axially extending slits and further is provided on an outer periphery of said outer end side with a dowel which engages with a dowel hole of said pipe joint body,

a push pin which, having a cylindrical form to be inserted in said sleeve, is formed at an outer end thereof a taper to engage with a through hole of the sleeve, and is provided at an inner end thereof with a protrusion having a pointed tip or a flat tip of small diameter,

a push screw holder which, having a cylindrical form to be fitted in a holder of said pipe joint body, is formed at an inner end thereof with a stopper portion having an outer diameter greater than a holder hole, and is formed with a threaded hole at a central axis, and

a push screw which, having a hexagonal recess at an outer end, is screwed in a threaded hole of a push screw holder and is formed at an inner end thereof with a pointed tip having a greater diameter to push therewith against a protrusion of a push pin inserted in a sleeve which is, in turn, fitted in an insertion part of said pipe joint body, thereby to shift said push pin in a direction of an axis of said sleeve.